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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,645	02/20/2004	Daniel L. Pleasant	10030906-01	7349

22878 7590 10/29/2009

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EXAMINER	
PIERRE LOUIS, ANDRE	
ART UNIT	**PAPER NUMBER**
2123	

NOTIFICATION DATE	DELIVERY MODE
10/29/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPOPS.LEGAL@agilent.com

Office Action Summary	Application No.	Applicant(s)	
	10/783,645	PLEASANT, DANIEL L.	
	Examiner	Art Unit	
	ANDRE PIERRE LOUIS	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *8-10 and 12* is/are allowed.

6)☒ Claim(s) *1-7,11 and 13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 8/11/2009 has been entered.

2. Claims 1-16 remain pending and are presented for examination.

Response to Arguments

3. Applicant's arguments filed 8/11/2009 have been fully considered but they are not persuasive.

3.1 Applicant argues that the cited references do not teach measuring any statistical distribution that characterizes the uncertainties in the derived model parameters, shown in claim 1 and measuring the accuracy of the measured Zener voltage from test device to test device ……, the Examiner respectfully notes that Applicant is argument more than the claims require; and asserts that Jamneala et al. provides the teaching a test system used to obtain a plurality of components characteristics/uncertainty using GSG probes, as the parameters of the GSG probes varies over a range of frequencies *(see abstract, fig.5, col.5 lines 66-col.6 line 62).* Piratelli-Filho et al. used as a secondary in further supporting the Examiner's position in the rejection of the instant is fully directed to method for determining measurement uncertainty using GUM and

Monte Carlo simulation method *(see abstract, 2.1-2.2)* and includes a point to point uncertainty measurement to include the calibration of the electronic model at multiple angles to generate a plurality of uncertainties with probability distributions *(see further pgs.3-4).* As per the arguments to claim 5, the Examiner, again, respectfully notes that applicant is arguing more than the claim requires and that the claim does not in any way show the measurement of accuracy of a measured Zener voltage from test device to test device, as specifically argued by the Applicant; the Examiner respectfully requests that Applicant argues what is being claims. However, both Jamneala and Piratelli-Filho, used in the rejection provide the variation of parameters during their uncertainty measurement *(see Jamneala fig.5, col.5 lines 66-col.6 line 62 and Piratelli-Filho pgs.2-4);* and Helisto reference is fully directed to the measurement of uncertainty in a noise region of a Zener voltage including a variation time and frequency to obtain a behaviour of the model *(see pg.401-402).* Although a small portion of the prior art was cited in the rejection, Applicant should consider the cited references cited entirely; however the ground of rejection below clearly shows what the Examiner relied upon in the rejection of the instant claims and fully support the Examiner' s position in rejecting the instant claims.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.1 Claims 1-7, 11, 13-16 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the description requirement thereof since the claims introduce new matter not

supported by the original disclosure. The original disclosure does not reasonably convey to a designer of ordinary skill in the art that applicant was in possession of the design now claimed at the time the application was filed. See *In re Daniels*, 144 F.3d 1452, 46 USPQ2d 1788 (Fed. Cir. 1998); *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981).

Specifically, the Examiner is unable to locate any support in the original disclosure to show that the measurement by a type of test system from individual test system to individual test system and a noise term that represent a variation in noise generated from one element to another characterized by corresponding probability distribution, as shown in the amended claims. If the Applicant feels otherwise, the Applicant is respectfully invited to point to very specific portions of the disclosure with very clear explanations where supports can be found for the limitation.

To overcome this rejection, applicant may attempt to demonstrate that the original disclosure establishes that he or she was in possession of the amended claim or cancel the claims.

Claim Objections

5. Claims 1, 5-6, and 16 are objected to because of the following informalities:

5.1 Claim 1, lines 11-12 recites the limitation “the plurality of model element values”; however, no reference has previously been made to "a plurality of model element values” in the claim. Appropriate correction is required.

5.2 claim 5 lines 1-2 refers to “the plurality of probability distributions”; however, the previous claim merely refers to "an expected probability distribution". Appropriate correction is required.

5.3 Claim 6 line 1 refers to the limitation "the plurality of uncertainty terms"; however, no reference has been made previously "plurality of uncertainty terms" in the claim. Appropriate correction is required.

5.4 Claim 16 line 1 recites the limitation "the step of developing the test system"; however, no "step of developing a test system" was previously mentioned in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.0 Claims 1-4, 6-7, 11, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jamneala et al. (U.S. Patent No. 6,804,807), in view of Piratelli-Filho et al. (Uncertainty Evaluation in small angle Calibration using ISO GUM Approach and Monte Carlo Method, June 2003).

6.1 In considering the independent claim 1, Jamneala et al. substantially teaches a method of determining a measurement uncertainty of a selected parameter of a device under test (DUT) when measured by a type of test system from individual test system to individual test system, said method comprising: providing a test system model for the combination of said test system and said DUT, said model having a plurality of model elements that affect said measurement uncertainty, each model element representing an element of said test system and

being characterized by a corresponding value that varies from element to element in accordance with an expected corresponding probability distribution (*fig.1, 5 (502), col.5 line 66-col.6 line 65, col.7 lines 63-64*); entering the test system model into a simulator (*fig.5 (504), col.7 lines 63-65*); running a sufficient number of iterations of the test system model on the simulator while randomly varying each of a first portion of the plurality of model element values within said corresponding probability distributions to produce a statistically significant number of results of the selected parameter (*fig.5 (510-512), col.6 lines 51-58 & col.8 lines 12-23*); and evaluating the results to determine the measurement uncertainty of the selected parameter of said DUT (*fig.5 (518), col.8 lines 12-23*). Although Jamneala et al. does not specifically state the exact term measurement uncertainty, one of ordinary skilled in the art would clearly appreciate the approach taken by Jamneala he teaches simulating the system to obtain simulation results and match them with measured values (*see fig.5*), and thus obtain a measurement of the uncertainty *(also see col.6 lines 40-62).* Nevertheless, Piratelli-Filho et al. substantially teaches a method for determining and evaluating measurement uncertainty using ISO GUM and Monte Carlo method (*see title*), including obtaining measurement at multiple angles *(see further pgs.2-4).* Piratelli-Filho et al. and Jamneala et al. are analogous art because they are from the same field of endeavor and that the method teaches by Piratelli-Filho et al. is similar to that of Jamneala et al. Therefore, it would have been obvious to one ordinary skilled in the art at the time of the applicant invention to combine the uncertainty evaluation method of Piratelli-Filho et al. with the method of Jamneala et al. because Piratelli-Filho et al. teaches obtaining expanded uncertainty results which proved simplified analysis (*see abstract*).

6.2 With regards to claim 2, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the simulator uses a harmonic balance simulation engine to produce the results *(see Jamneala et al. col.6 lines 7-17 (ADS simulator); also see Piratelli-Filho et al. section 2.2-3).*

6.3 As per claims 3, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the simulator uses a time-domain simulation engine to produce the results *(see Jamneala et al. col.6 lines 7-17 (ADS simulator); also see Piratelli-Filho et al. section 2.2-3).*

6.4 With regards to claim 4, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the simulator uses a linear S-parameter simulation engine to produce the results *(see Jamneala et al. col.6 lines 7-17 (ADS simulator); also see Piratelli-Filho et al. section 2.2-3).*

6.5 Regarding claim 6, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the plurality of uncertainty terms includes a test instrument uncertainty term for a test instrument in the test system *(see Jamneala et al. fig.1; also see Piratelli-Filho et al. pg.1-4).*

6.6 As per claim 7, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the test instrument uncertainty term is selected from the group consisting of a temperature drift uncertainty term, an aging drift uncertainty term, an accuracy uncertainty term, and a repeatability uncertainty term *(see Piratelli-Filho et al. pg.1-4).*

6.7 Regarding claim 11, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the test system model includes a test instrument as a device under

test *(see Jamneala et al. fig.1, col.1 lines 60-64, col.3 line 50-col.4 line 6; also see Piratelli-Filho et al. pg.1-4).*

6.8 With regards to claim 13, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach the step of running occurs at a first operating condition and further comprising steps of: running a sufficient number of iterations of the test system model on the simulator at a second operating condition while randomly varying each of the first portion of the plurality of uncertainty terms within probability distributions to produce a statistically significant number of second results of the selected parameter *(see Jamneala et al. fig.2B-5, col.6 line 41-col.8 line 23; also see Piratelli-Filho et al. pg.1-4)*; and evaluating the second results to determine a second measurement uncertainty of the selected parameter *(see Jamneala et al. fig.2B-5, col.6 line 41-col.8 line 23; also see Piratelli-Filho et al. pg.1-4).*

6.9 As per claim 14, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach the step of running is done using a first type of simulation engine and further comprising steps of: running a second sufficient number of iterations of the test system model on the simulator using a second type of simulation engine while randomly varying each of the first portion of the plurality of uncertainty terms within probability distributions to produce a statistically significant number of second results of a second selected parameter *(see Jamneala et al. fig.2B-5, col.6 line 41-col.8 line 23; also see Piratelli-Filho et al. pg.1-4)*; and evaluating the second results to determine a second measurement uncertainty of the second selected parameter *(see Jamneala et al. fig.2B-5, col.6 line 41-col.8 line 23; also see Piratelli-Filho et al. pg.1-4).*

6.10 Regarding claim 15, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach the step of developing a computer-readable library of test system components with uncertainty terms, and wherein the step of entering the test system model into the simulator includes loading uncertainty terms associated with the test system components from the computer-readable library *(col.8 lines 35-45)*.

6.11 As per claim 16, the combined teachings of Jamneala et al. and Piratelli-Filho et al. substantially teach that the step of developing the test system model includes automatically generating system specifications *(fig.5, col.8 lines 12-23; also see Piratelli-Filho et al. pg.1-4)*.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jamneala et al. (U.S. Patent No. 6,804,807), in view of Piratelli-Filho et al. (Uncertainty Evaluation in small angle Calibration using ISO GUM Approach and Monte Carlo Method, June 2003), and further in view of Helisto et al. (Measurement Uncertainty in the 1/f noise region: Zener Voltage Standards, IEEE 2000).

7.1 Regarding claim 5, Jamneala et al., as modified by Piratelli-Filho et al. and applied to claims 1-4, and 6-7, 11, 13-16 above, teaches most of the instant invention, including the variation of parameter from one element to another *(see Jamneala fig.5, col.5 lines 66-col.6 line 62 and Piratelli-Filho pgs.2-4)*. However, they do not clearly teach that the plurality of probability distributions includes a noise term. Helisto et al. substantially teaches a Measurement Uncertainty in the 1/f noise region and the variation of frequency and time with his simulation to obtain a plurality of measurement *(see title, pg.401-402)*. Piratelli-Filho et al., Jamneala et al., and Helisto et al. are analogous art because they are from the same field of endeavor and that the

method teaches by Helisto et al. is similar to that of Jamneala et al. and Piratelli-Filho et al. Therefore, it would have been obvious to one ordinary skilled in the art at the time of the applicant invention to combine the uncertainty measurement method of Helisto et al. with the method of Jamneala et al. and the uncertainty evaluation method of Piratelli-Filho et al. because Helisto et al. teaches a development that enable the measurements down to the fundamental noise limit of metrological devices *(see pg.402)*.

Allowable Subject Matter

8. Claims 8-10 and 12 are allowed.

8.1 The following is an examiner's statement of reasons for allowance:

8.2 In view of the Appeal Brief filed on 11/08/2007, the Reply Brief filed on 3/13/2008, and the **Board of Patent Appeals and Interferences (BPAI)** decision of 6/11/2009, the rejections with regards to the claims 8-10, and 12 are withdrawn and claims 8-10, and 12 are allowed.

8.3 Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. Claims 1-7, 11, 13-16 are rejected and claims 8-10, 12 are allowed; **THIS ACTION IS Non-FINAL.** Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andre Pierre-Louis whose telephone number is 571-272-8636. The examiner can normally be reached on Mon-Fri, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. P. L/
Examiner, Art Unit 2123

October 23, 2009

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123